Message

From: George Allen [gallen@nescaum.org]
Sent: 8/20/2019 3:27:09 PM
To: Johnson, Steffan [johnson.steffan@epa.gov]
CC: Lisa Rector [lrector@nescaum.org]
Subject: more on dekati edilutor

Hi Stef - good to talk w/ you today. Here's more info on why ~ 36 DF is the sweet spot.

Dilution tunnels at 140 to 200 cfm have a DF of somewhat less than 10 to at most 20. Since we measure the stack flow, we know the tunnel DF. ASTM at 500 cfm is ~ 35 DF. We don't want to get too far away from what has been used.

We wouldn't want to go higher than 36 since pulling a 5g filter off the dekati would get more difficult. Also, the dilution air flow requirements increase with DF, and thus pump requirements get tougher.

We don't want to go much lower since the diluted sample would start to have meaningful moisture in it, and losses in the dilutor might increase. Not having any moisture in the sample stream is a huge plus.

Fyi, one way to check if the dekati DF is correct is to dilute CO. Test labs already have a CO analyzer and a cal tank for it. All they do is hook their CO cal system to the inlet of the dilutor and measure the CO coming out of it [maybe with a room CO correction]. Done. If it's not working, you'll know it. The other way is to measure the 2nd stage ejector flow, but that requires taking the dilutor apart and having a way to measure ~ 7 lpm. Not hard but not as quick, but is also a troubleshooting tool -- if it's not right, this tells you which stage has a problem. Of course the 1st stage ejector flow is easy to measure - it's the dilutor inlet flow.

-- George